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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Urs Burckhardt

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EXAMINER

HEINCER, LIAM J

ART UNIT

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1796

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,138	Applicant(s) BURCKHARDT, URS	
	Examiner Liam J. Heincer	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on January 5, 2009 and February 4, 2009 have been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merger et al. (US Pat. 4,853,454) in view of Aoki et al. (US Pat. 5,010,161).

Considering Claim 1: Merger et al. teaches a polyaldimine (3:3-4) which is obtainable from at least one polyamine having aliphatic primary amino groups (7:48-62) and at least one aldehyde (8:67-9:17).

Merger et al. does not teach the aldehyde as having the claimed formula. However, Aoki et al. teaches using an aldehyde of the claimed formula in a polyaldimine (Formula IV). Merger et al. and Aoki et al. are combinable as they are concerned with the same field of endeavor, namely polyaldimine compositions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the aldehyde of Aoki et al. in the composition of Merger et al., and the motivation to do so would have been, as Aoki et al. suggests, it is presented as a functional equivalent to the aldehyde of Merger et al. (8:5-6).

Considering Claim 2: Merger et al. teaches the polyamine as being 1,6-hexamethylene diamine, 2,2,4-trimethylhexanamethylenediamine (7:57-58) or IPDA (8:13-14).

Considering Claims 3 and 4: Claims 3 and 4 are product by process claims. There is nothing on the record to show that these process steps will provide a materially different composition from those of the references.

Considering Claim 5: Merger et al. teaches the aldehyde as being present stoichiometrically, or in a stoichiometric excess (7:31-33).

Considering Claim 6: Merger et al. teaches an aldehyde with methyl groups at the alpha position (7:22-31 and 3:59-62).

Considering Claim 17: The polyaldamine of the combination of Merger et al. and Aoki et al. is a homologue of the claimed structure. Therefore there would be a reasonable expectation that the two structures would have similar properties. A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See MPEP § 2144.09.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merger et al. (US Pat. 4,853,454) in view of Aoki et al. (US Pat. 5,010,161).

Considering Claim 7: Merger et al. teaches a process for preparing a polyaldimine (7:17-22) comprising reacting a polyamine having aliphatic primary amino groups (7:48-62) and at least one aldehyde (8:67-9:17).

Merger et al. does not teach the aldehyde as having the claimed formula. However, Aoki et al. teaches using a aldehyde of the claimed formula in a polyaldimine (Formula IV). Merger et al. and Aoki et al. are combinable as they are concerned with the same field of endeavor, namely polyaldimine compositions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the aldehyde of Aoki et al. in the process of Merger et al., and the motivation to do so would have been, as Aoki et al. suggests, it is presented as a functional equivalent to the aldehyde of Merger et al. (8:5-6).

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merger et al. (US Pat. 4,853,454) in view of Aoki et al. (US Pat. 5,010,161).

Considering Claim 14: Merger et al. teaches a polyaldimine (3:3-4) which is obtainable from at least one polyamine having aliphatic primary amino groups (7:48-62) and at least one aldehyde (8:67-9:17). Merger et al. also teaches the polyaldimine as undergoing hydrolysis when contacted with moisture/gaseous water (9:37-38).

Merger et al. does not teach the aldehyde as having the claimed formula. However, Aoki et al. teaches using a aldehyde of the claimed formula in a polyaldimine (Formula IV). Merger et al. and Aoki et al. are combinable as they are concerned with the same field of endeavor, namely polyaldimine compositions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the aldehyde of Aoki et al. in the composition of Merger et al., and the motivation to do so would have been, as Aoki et al. suggests, it is presented as a functional equivalent to the aldehyde of Merger et al. (8:5-6).

Considering Claim 16: Merger et al. teaches the composition being in a composition comprising isocyanate groups (2:65-66).

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merger et al. (US Pat. 4,853,454) in view of Aoki et al. (US Pat. 5,010,161) as applied to claim 7 above, and further in view of Jacobsen et al. (US Pat. 3,935,274).

Considering Claims 8 and 9: Merger et al. and Aoki et al. collectively teach the process of claim 7 as shown above.

Merger et al. does not teach preparing the aldehyde from a carboxylic acid and a β -hydroxy aldehyde. However, Aoki et al. teaches preparing the aldehyde from a carboxylic acid and 3-hydroxy-2,2, dimethyl propanol/3-hydroxypivalaldehyde (8:16-18). It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used a aldehyde prepared as in Aoki et al. in the process of Merger et al., and the motivation to do so would have been the composition's lower viscosity (Table 4).

Merger et al. does not teach the β -hydroxy aldehyde as being prepared from a reaction of formaldehyde or paraformaldehyde and a second alcohol. However, Jacobsen et al. teaches

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forming 3-hydroxy-pivalaldehyde from formaldehyde and isobutyraldehyde (1:7-10). Merger et al. and Jacobsen et al. are combinable as they are concerned with the same field of endeavor, namely aldehyde compositions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the aldehyde preparation of Jacobsen et al. in the process of Merger et al., and the motivation to do so would have been, as Jacobsen et al. suggests, to give a highly reactive β -hydroxy aldehyde (1:38-39).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merger et al. (US Pat. 4,853,454) in view of Aoki et al. (US Pat. 5,010,161) as applied to claim 7 above, and further in view of Wagner et al. (US Pat. 3,835,191).

Considering Claim 10: Merger et al. and Aoki et al. collectively teach the process of claim 7 as shown above.

Merger et al. does not teach there being no solvents used during the preparation of the polyaldimine. However, Wagner et al. teaches making an aldimine (1:44-48) with no solvents (10:40-44). Merger et al. and Wagner et al. are combinable as they are concerned with the same technical difficulty, namely aldimine formation. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have not used solvents in the process of Merger et al. as in Wagner et al., and the motivation to do so would have been, as Wagner et al. suggests, to eliminate the removal of solvents step (15:28-30).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merger et al. (US Pat. 4,853,454) in view of Aoki et al. (US Pat. 5,010,161) as applied to claim 1 above, and further in view of Aoki et al. (JP 07025976). Note a machine translation is being used for Aoki et al. and all references will be to this translation.

Considering Claim 15: Merger et al. and Aoki et al. collectively teach the process of claim 1 as shown above. Merger et al. also teaches the polyaldimine as hydrolyzing the in presence of water (37-40).

Merger et al. does not teach adding a water-containing component to the composition. However, Aoki et al. '976 teaches adding water/a water-containing component (§0005) to a composition comprising a polyamine containing latent curing agent/a polyaldamine (§0006).

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Merger et al. and Aoki et al. '976 are combinable as they are concerned with the same field of endeavor, namely isocyanate compositions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have added the water of Aoki et al. '976 to the composition of Merger et al., and the motivation to do so would have been, as Aoki et al. '976 teaches, to obtain a cured product (¶0005).

Response to Amendment

The declaration under 37 CFR 1.132 filed February 4, 2008 is insufficient to overcome the rejection of claims 1-17 based upon the combination of Merger et al. and Aoki et al. as set forth in the last Office action because:

The data is not sufficient to show the unexpected nature of the property. Any differences between the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). 716.02. The data shows a trend of decreasing odor as the length of the carbon chain is increased (Table 2). As Merger et al. teaches that the vapor pressure, and thus the odor, of the aldehyde is controlled by the molecular weight (9:18-31), the decrease in odor as the molecular weight increase would have been expected by a person having ordinary skill in the art at the time of invention. As the difference is merely a difference in degree rather than a difference in kind, the data is not sufficient to show the criticality of the claimed range.

Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2144.05. As the declaration is insufficient to show the criticality of the claimed range, the *prima facie* case of obviousness has not been overcome.

Response to Arguments

Applicant's arguments filed February 4, 2009 and January 5, 2009 have been fully considered but they are not persuasive, because:

The allegation of unexpected results has been addressed in the discussion of unexpected results above.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harold Y Pyon/

Supervisory Patent Examiner, Art Unit
1796

LJH

April 8, 2009